

SONY.

EV-C500E

Chapter 1 Introduction	
Chapter 2 Preparation	
Chapter 3 Basic Operations	
Chapter 4 Advanced Operations	
Chapter 5 Editing	
Chapter 6 Additional Information	

Video Cassette Recorder **Hi8**

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.



WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

A moulded plug complying with BS 1363 is fitted to this equipment for your safety and convenience.

Should the fuse in the plug supplied need to be replaced, a 5 AMP fuse approved by ASTA or BSI to BS 1362, (i.e., marked with  or  mark) must be used.

If the plug supplied with this equipment has a detachable fuse cover, be sure to attach the fuse cover after you change the fuse. Never use the plug without the fuse cover. If you should lose the fuse cover, please contact your nearest Sony service station.

IMPORTANT


If the plug supplied is not suitable for the socket outlets in your home, it should be cut off and an appropriate plug fitted in accordance with the following instructions.

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red. Do not connect either wire to the earth terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured green or green-and-yellow.

WARNING

To prevent shock hazard, do not insert the plug cut off from the mains lead into a socket outlet. This plug cannot be used and should be destroyed.

Caution

Television programmes, films, video tapes and other materials may be copyrighted.

Unauthorized recording of such material may be contrary to the provisions of copyright laws.

Also, use of this recorder with cable television transmission may require authorization from the cable television transmitter and/or programme owner.

Welcome!

Congratulations on your purchase of the Sony EV-C500E Video Cassette Recorder.
This video cassette recorder is the result of our commitment to bring Sony customers
high quality and state-of-the-art technology.
Thank you for choosing Sony.

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Precautions

Safety

- For the models designed for UK, operate the unit only on 240 V AC, 50 Hz. For the models designed for other European countries, operate the unit on 220 – 240 V AC, 50 Hz.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if you do not intend to use it for an extended period of time. To disconnect the cord, pull it out by the plug, never by the cord itself.
- The unit is not disconnected from the mains (AC power source), as long as it is connected to the mains outlet, even if the unit itself has been turned off.
- The ON/STANDBY indicator lights up red when the VCR is turned off (standby mode), and lights up green when the VCR is turned on (power on mode).

Installation

- Allow adequate air circulation to prevent internal heat buildup
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not install the unit in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Keep the unit away from a TV. Otherwise, it may cause interference with the TV.
- Do not place heavy objects on the unit.

Operation

- When the unit is not in use, turn the power off to conserve energy and to extend its life.
- Remove and store video cassettes after recording or playback.

Cleaning

- Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution.
- Do not use any type of solvent, such as alcohol or benzene.

Recording and Playback

- This VCR uses 8 mm video format cassettes.
- This VCR records and plays back both in the Hi8 video system and standard 8 mm video system.
- This VCR records only in SP mode and plays back both in SP and LP modes.
- The PCM audio feature is not available on this VCR. Therefore, you can neither record in the digital multi system, nor play back a tape recorded in the digital multi system on other VCRs.
- Audio dubbing cannot be performed on this VCR.

Features

High quality picture and sound

- **Hi8 video system**
The Hi8 video format features 400 lines of horizontal resolution, giving you a high video quality.
- **AFM Hi-Fi stereo system**
You can record Hi-Fi sound with a live stereo sound atmosphere.

Editing

- **DUAL MODE SHUTTLE ring**
Allows quick access to the desired scene and playback at various speeds in both forward and reverse directions.
- **CONTROL L (LANC) connector**
Allows easy connection to another piece of equipment such as a video camera recorder (camcorder). This lets you control tape transport of both devices from one set of controls. With this simultaneous control you can use bi-directional synchronized editing.
- **CONTROL S IN connector**
Allows remote control of this VCR by other Sony video equipment with a CONTROL S OUT connector.
- **S VIDEO IN/OUT connector**
Allows clear picture by separating colour signal from luminance signal.

Function

- **Voice boost function**
When playing back a tape recorded with a video camera recorder (camcorder), voice boost enhances the voice portion of the sound and reduces "unwanted" background noise like wind so that it is easier to listen to conversation.

How to Use This Manual

This manual is divided into the following six chapters: **Chapter 1** Introduction, **Chapter 2** Preparation, **Chapter 3** Basic Operations, **Chapter 4** Advanced Operations, **Chapter 5** Editing and **Chapter 6** Additional Information.

If you are already familiar with the basic operations, skip **Chapter 3** Basic Operations and see **Chapter 4** Advanced Operations.

If you have any problems with installing or operating the EV-C500E, refer to the troubleshooting section first before calling your local Sony dealer.

When you are reading through the manual, remember:

- Buttons and switches on the VCR to be used in operating the VCR are called out and shown in uppercase letters in the illustrations.
- Buttons and switches on the Remote Commander to be used for operating the VCR are called out and enlarged in the illustrations.

Conventions



This indicates a function operated only with the buttons on the VCR itself, but not with those on the Remote Commander.



This indicates a function operated only with the buttons on the Remote Commander, but not with those on the VCR itself.

Unpacking

Unpack all the items and check to confirm that you have everything listed below.

- Remote Commander RMT-V124C (1)
- R6 (size AA) batteries (2)
- AV (audio/video) cable (3 phono to 3 phono) (1)
- Mains lead (1)

Hookups and Getting Started

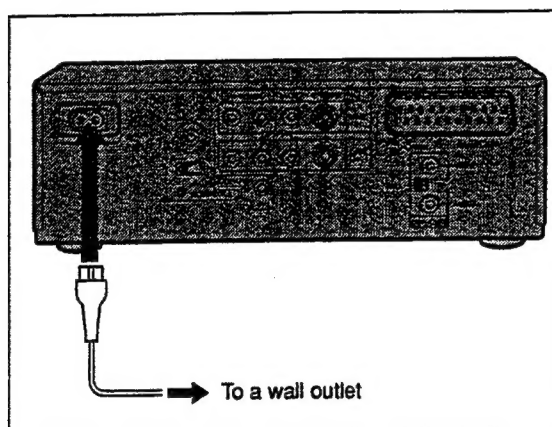
Before you can use your VCR for the first time, you need to connect it to your TV and set it up to play back video programmes for viewing. This section explains how to hook up, set up, and prepare the Remote Commander so that you can start enjoy it right away. There are, however, many types of TVs available and many different ways in which your TV can be hooked up. As a result, this manual describes several ways your VCR can be connected.

Use the following table to select the correct hookup for your TV.

When	See
Your TV has audio/video (A/V) inputs	Hookup 1 Audio/Video (A/V) Hookup (pages 7 and 8)
Your TV does not have audio/video (A/V) inputs	Hookup 2 RFU DC OUT Hookup (page 9)

Before making the connections, check the following points:

- Turn off the power to the VCR and TV.
- Do not connect the mains lead until all of the connections are completed.



- Make connections firmly. Loose connections may cause picture distortion.
- If your TV does not match any of the examples provided, consult your nearest Sony dealer or qualified technician.

Caution

Do not place the VCR near a TV. The playback picture may become distorted.

X NO!

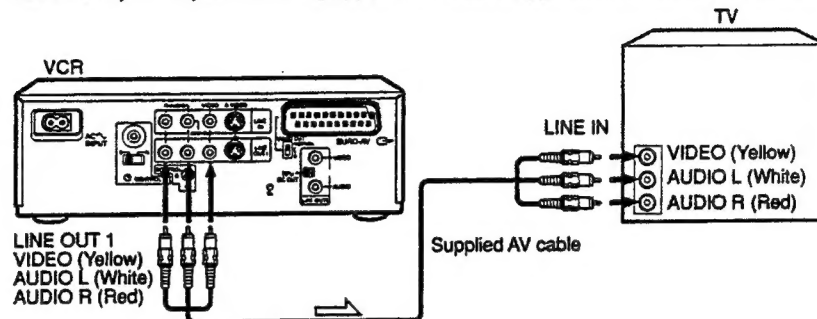


Hookup 1

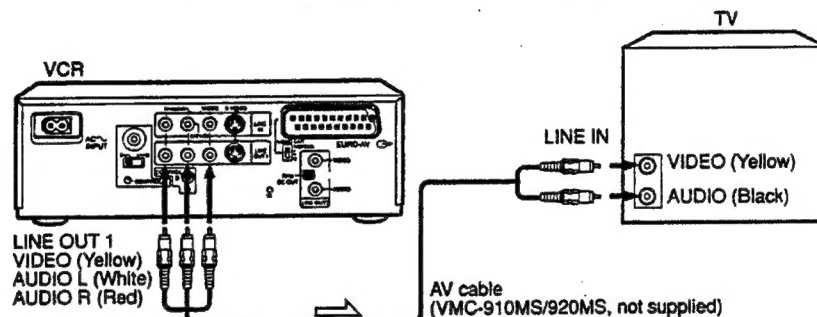
Audio/Video (A/V) Hookup

If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. If your TV does not have A/V inputs, see page 9 for RFU DC OUT hookup.

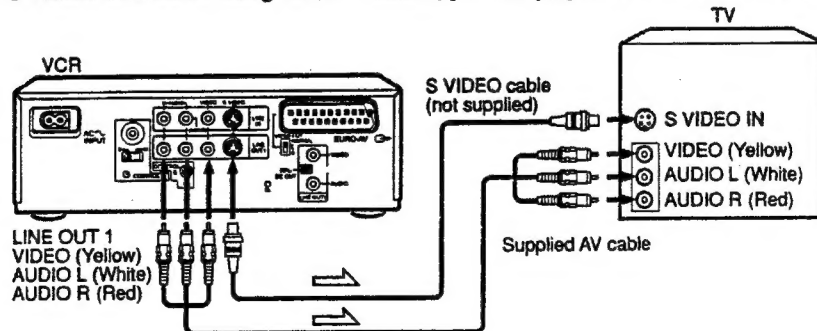
- 1A** Use hookup 1A if your TV is equipped with stereo-type audio/video input jacks.



- 1B** Use hookup 1B if your TV is equipped with monaural-type audio/video input jacks.



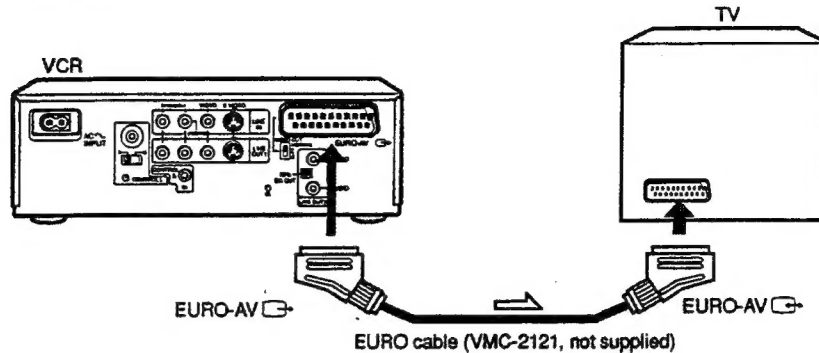
- 1C** Use hookup 1C if your TV is equipped with both the stereo-type audio/video input jacks and the S VIDEO connector. Using this connection, you can play back a cassette for a much better picture.



Note

If your TV has an S VIDEO/VIDEO selector switch, set this to "S VIDEO" to view the picture from the S VIDEO connector.

- 1D** Use hookup 1D if your TV is equipped with a EURO 21-pin connector. With this connection the VCR cannot record TV programmes. It can only play back a pre-recorded video tape.



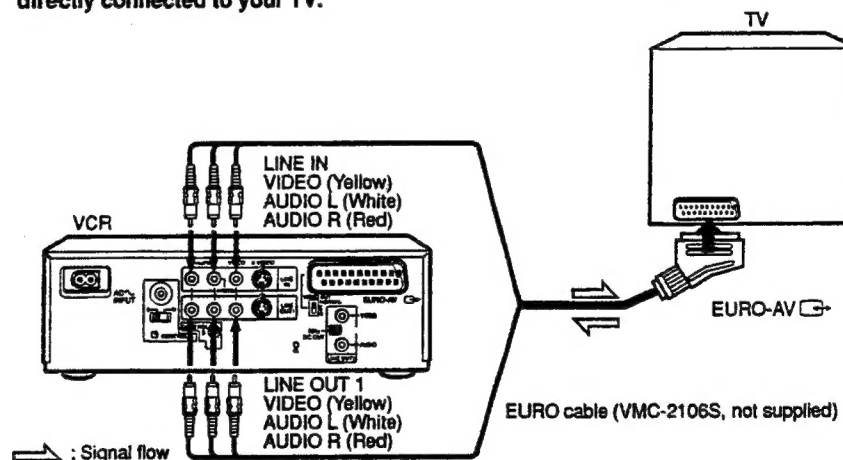
When using hookup 1D, you should set the VIDEO OUT selector, located just below the EURO 21-pin connector, to "S" if your TV has an S EURO-AV connector and you want to obtain a much better quality playback picture (same as in hookup 1C).

If your TV does not have an S EURO-AV connector, set the VIDEO OUT selector to "NORMAL."

Note

If your TV does not have an S VIDEO function and if you set the VIDEO OUT selector to "S," the playback picture will be monochrome.

- 1E** Use hookup 1E if your TV is equipped with a EURO 21-pin connector and you want to record TV programmes. This hookup allows you to record broadcast programmes received by your TV if the aerial input is directly connected to your TV.



Hookup 2

RFU DC OUT Hookup

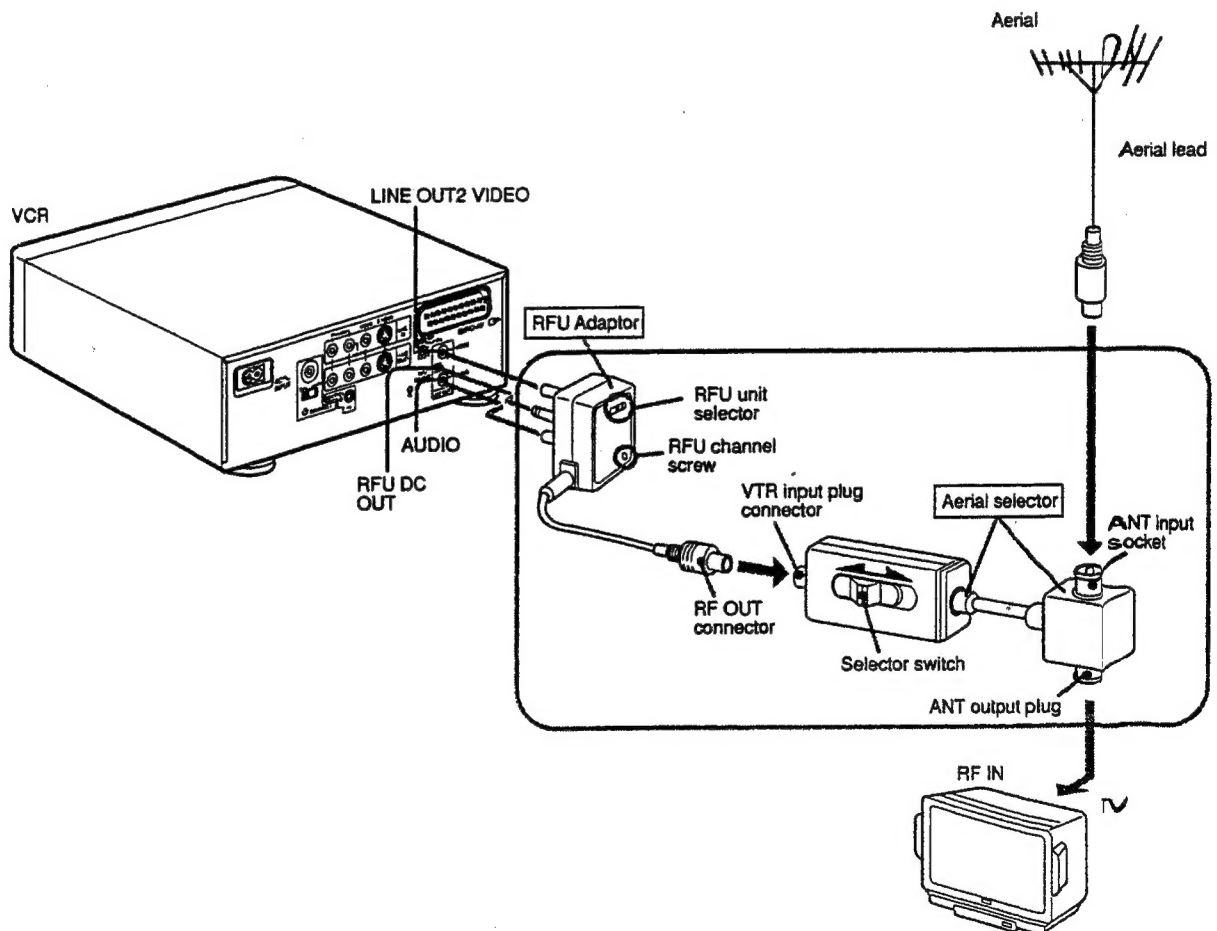
If your TV does not have audio/video input jacks or a EURO 21-pin connector, you should make an RFU DC OUT connection using an RFU kit (RFU-89EKA, not supplied). For details of the RFU kit, refer to the instruction manual of the RFU kit.

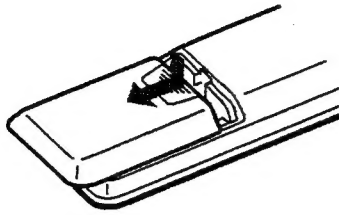
Connecting an aerial

- 1 Disconnect the aerial input lead from your TV and connect it to the ANT input socket of the RFU kit.
- 2 Connect the ANT output plug of the aerial selector to the aerial input socket of your TV.
- 3 Connect the aerial selector to the RFU adaptor.
- 4 Connect the RFU adaptor to the LINE OUT2 RFU DC OUT connector of the VCR.

Notes

- When you use the VCR, set the selector switch on the aerial selector to "VTR."
- The output sound will be monaural when using this hookup even though you play back a stereo tape.



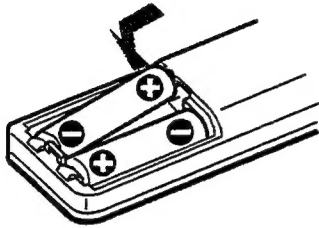


Inserting Batteries

1 Open the lid.

2 Insert two R6 batteries (IEC designation) by matching the + and – on the batteries with the + and – indications in the battery compartment.

3 Close the lid.



Notes on the handling of batteries

- With normal use, the batteries should last for approximately six months.
- If you do not use the Remote Commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one. Do not use different types of batteries.

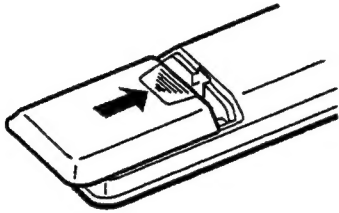
Controlling Other Sony Video Equipment

You can control other Sony video equipment having the command mode selector, using this Remote Commander.

Set the command mode selector for the other equipment to "VTR2."

If other Sony video equipment does not have the command mode selector

You can control an 8 mm format VCR only. You cannot use this Remote Commander with a Betamax VCR or a VHS-format VCR.




Playback



▲ EJECT

This section shows you how to play back a video cassette.

Inserting a Video Cassette

- 1 Insert a video cassette with the window facing upwards.
- 2 Gently press the centre of the front side of the cassette until the mechanism draws it into the compartment.
When the cassette has been inserted, the cassette indicator  lights up in the display window and the VCR turns on automatically.

Ejecting the Video Cassette

Press ▲ EJECT on the VCR. You can eject the cassette when the power is off. When you press ▲ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Note

You cannot eject a cassette during recording or recording pause mode.

Cassette Care

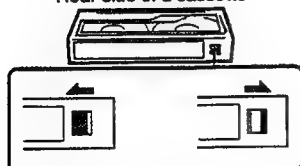
Notes

- Always insert the cassette in the correct position.
- Never insert anything in the small holes on the rear of the cassette.
- Store cassettes in their cases and keep them in an upright position to prevent intrusion of dust and uneven winding.
- To record from the beginning of the tape, run the VCR for about 15 seconds at the beginning of a cassette before recording.
- When the VCR is not in use, remove the cassette.
- Stick the cassette label in the designated area.
- Stick the label on securely so it will not peel off and damage the VCR.

Maximum recording/playback time of a cassette

Cassette used	Recording/ Playback Time (SP mode)	Playback Time (LP mode)
E5/P5-30	30 min	1h
E5/P5-60	1h	2h
E5/P5-90	1h 30 min	3h
P5-110	1h 50 min	3h 40 min
E5-120	2h	4h

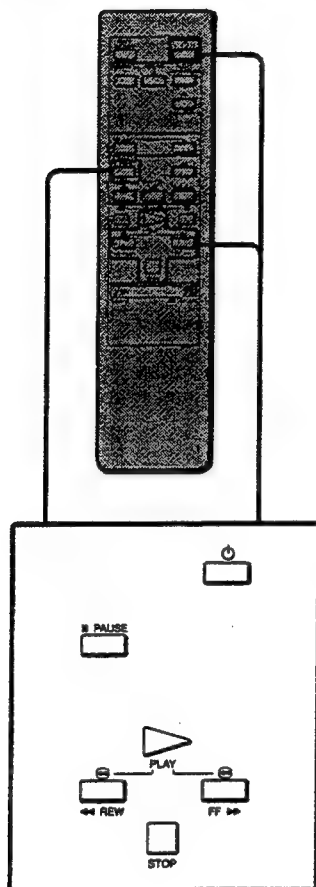
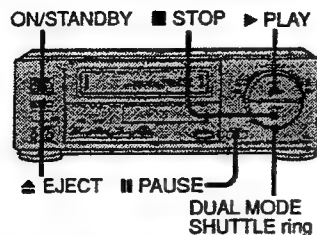
Rear side of a cassette



Protecting your cassette against accidental erasure

To prevent accidental erasure, slide out the tab on the back of the cassette so that the red colour is visible.

To re-record on the cassette, slide the tab back.



Playing Back a Cassette

You can control playback with the identically marked buttons on either the VCR or the Remote Commander.

The VCR automatically detects the video system and tape speed in which the tape was recorded (Hi8 or standard video system, for details see page 34; SP or LP mode) and plays it back accordingly. When a tape recorded in the Hi8 video system is played back, the Hi8 lamp on the front panel lights up.

1 Insert a cassette.

The VCR turns on automatically.

2 Turn on the TV.

If your VCR has a LINE OUT or EURO-AV connection, select the AV input.

If your VCR has an RFU DC OUT connection, set the selector switch on the aerial selector to "VTR" and turn the TV to the programme position for the VCR you set with the RF channel screw on the RFU adaptor. (For the RFU DC OUT connection, see page 9.)

3 Press ► PLAY.

To stop playback

Press ■ STOP.

To stop playback for a moment

Press || PAUSE.

Press || PAUSE again or press ► PLAY to resume playback.

To advance the tape rapidly

VCR: Press ■ STOP, then turn the DUAL MODE SHUTTLE ring clockwise.

Remote Commander: Press ■ STOP, then FF ►►.

To rewind the tape

VCR: Press ■ STOP, then turn the DUAL MODE SHUTTLE ring counterclockwise.

Remote Commander: Press ■ STOP, then ◀◀ REW.

To view the picture during fast forward mode or rewind mode

You can view the picture momentarily while the VCR is in fast forward or rewind mode.

VCR: Turn the DUAL MODE SHUTTLE ring clockwise in fast forward mode, or counterclockwise in rewind mode. Then release the ring to return to fast forward or rewind mode.

Remote Commander: Press and hold FF ►► in fast forward mode, or press and hold ◀◀ REW in rewind mode. Then release the button to return to fast forward or rewind mode.

To eject the cassette

Press ▲ EJECT on the VCR.

Pressing ▲ EJECT when the VCR is turned off will turn the VCR on, eject the cassette and then turn it off again.

When the tape reaches the end during playback

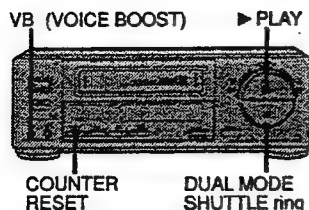
The VCR automatically rewinds the tape to the beginning and the power remains on.

To turn the VCR on or off

Press ON/STANDBY on the VCR or ⏻ on the Remote Commander.

Never unplug the mains lead while a tape is moving

This may cause the tape to be jammed in the VCR. When you need to unplug the mains lead, be sure to remove the cassette or turn off the power of the VCR.

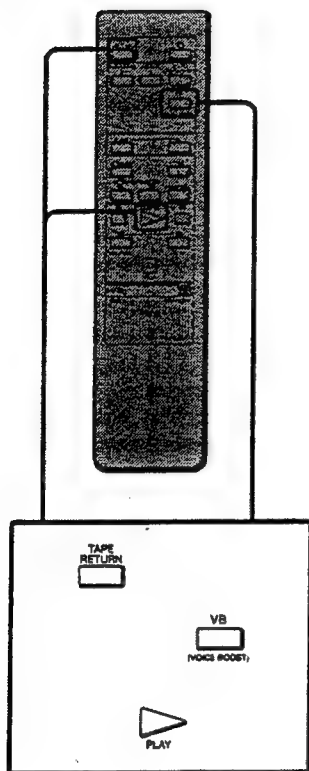


Auto Play

You can start playback automatically after rewinding a cassette. This operation works only on the VCR. (You cannot use AUTO PLAY with the Remote Commander.)

Press ► PLAY while turning the DUAL MODE SHUTTLE ring counterclockwise fully.

Playback starts automatically after the tape is rewound to the beginning of the tape.



Indexing the Tape Contents

Before recording or playback, press COUNTER RESET to reset the counter to zero. This counter is a "linear time counter," which shows you how much the tape has run in terms of time. By noting the setting, you can find that point later by referring to the counter. Use the label on a cassette to list the programmes and their counter readings. Since the counter is not very accurate, use it only for reference.

Locating a Particular Scene Later

If you want to return to a particular scene later, press COUNTER RESET on the VCR at the desired scene so that the linear time counter resets to "0H00M00S."

To return to the desired scene

Press TAPE RETURN on the Remote Commander while the VCR is in stop mode. The tape rewinds to the position where the counter reads "0H00M00S," and stops.

To start playback of the scene

Press ► PLAY.

Listening More Easily to Conversation Recorded with a Camcorder

When you press VB (VOICE BOOST) while playing back a tape recorded with a camcorder, the human voice portion of the sound is enhanced so that it is easier to hear conversation. This reduces the sound of wind and other "unwanted" background noise.

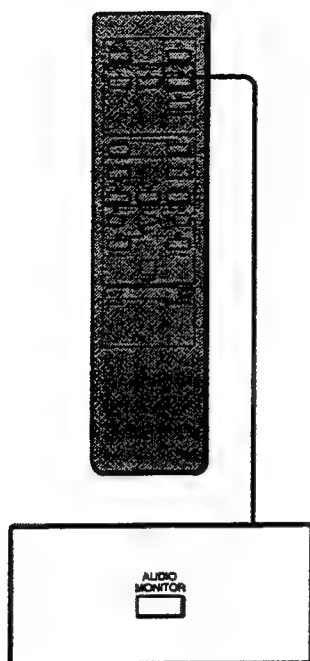
Notes on counter reading

- The counter does not work on unrecorded portions of the tape.
- After a cassette is ejected, the counter reading is retained. When a cassette is inserted in the VCR, the counter reading automatically resets to "0H00M00S."
- The linear time counter installed in this VCR is not a clock. There is a difference between the actual recording and playback time, and the counter display. This difference may increase when switching the tape speed from SP to LP and vice-versa, or depending on tape position being played back.

Note on VOICE BOOST

When you use VOICE BOOST while playing back a tape recorded by video equipment other than a camcorder, the sound may not be heard easily.

VOICE BOOST may not be effective while playing back a tape recorded in monaural or bilingual programmes.



Selecting the Monitor Sound

You can select the sound you want to hear when you play a bilingual tape.

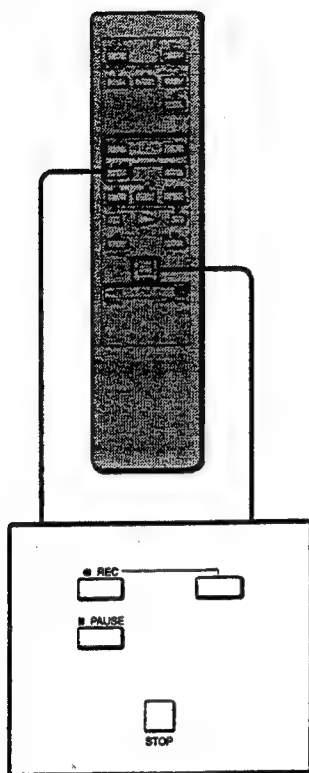
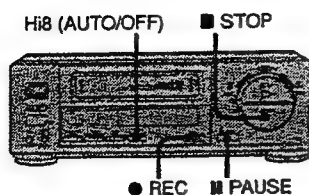
Press AUDIO MONITOR on the Remote Commander. With each press, you can select main sound, sub sound, or main and sub sound. The monitor sound indicators will tell you what sound you are selecting.

When you play back a monaural tape, the indicator will not light up and the button will become inoperative.

Lighted monitor sound indicators on the VCR front panel	Sound heard
MAIN/L	Main sound
SUB/R	Sub sound
MAIN/L and SUB/R	Main and sub sound

If you record a bilingual programme in stereo mode, the programme can be played back in main (L) or sub (R) sound by pressing AUDIO MONITOR. Even if you select only one channel (right channel or left channel), the slight sound of unselected channel will be heard.

Recording



Notes

- Use the S VIDEO cable (not supplied) to obtain Hi8 picture quality fully during recording.
- It is not necessary to turn on the TV, if you are not going to watch a video programme while recording it. Skip steps 2 and 3.
- When the tape reaches the end, the VCR automatically rewinds the tape to the beginning and the power remains on.

This section shows you how to record a video programme from other equipment having A/V output jacks such as a camcorder. You can record in the Hi8 video system or the standard 8 mm video system. This VCR records only in SP mode.

To select the recording system

- To record a Hi8 video tape in the Hi8 system, press Hi8 (AUTO/OFF) so that the Hi8 lamp lights up (AUTO mode).
- To record a Hi8 video tape in the standard 8 mm system, press Hi8 (AUTO/OFF) so that the Hi8 lamp goes off (OFF mode).
- When a standard 8 mm video tape is to be used, the Hi8 (AUTO/OFF) button becomes inoperative and recording is always made in the standard 8 mm system.

Video tape used	Hi8 setting	Recording system	Hi8 lamp
Hi8 video tape	AUTO	Hi8 video system	Lit
	OFF	Standard 8 mm video system	Unlit
Standard 8 mm video tape	—	Standard 8 mm video system	

Before You Begin

Check the following points:

- Make sure that the connections have been made correctly (see pages 7 and 8).
- Make sure the cassette is long enough to record the source programme.
- Make sure the safety tab of the cassette has not been slid out. If you insert a cassette with the safety tab visible in red (closed) and press ● REC, the VCR automatically ejects the cassette.

Recording a Video Programme while Watching It

- 1 Insert a cassette.
The VCR turns on automatically.
- 2 Turn on the TV.
- 3 If your VCR has a LINE OUT or EURO-AV connection, select the AV input. If your VCR has an RFU DC OUT connection, set the selector switch on the aerial selector to "VTR" and turn the TV to the programme position you set with the RF channel screw on the RFU adaptor.
- 4 Press both ● RECs on the Remote Commander at the same time, or ● REC on the VCR.
The REC indicator on the VCR lights up.

To stop recording

Press ■ STOP.

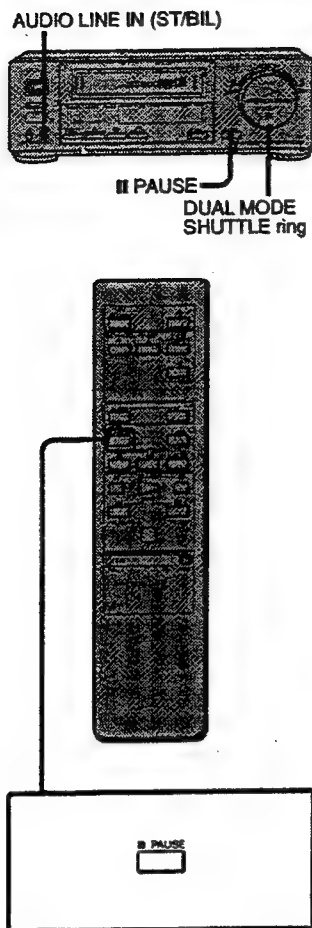
To pause recording

Press ■ PAUSE.

To resume recording

Press ■ PAUSE.

If the recording pause exceeds 7 minutes, the VCR stops.



Pausing

Technique 1

You can stop recording an unwanted scene and resume recording smoothly.

- 1 Press **PAUSE** when an unwanted scene appears.
Recording will stop and the VCR enters recording pause mode.
- 2 Press **PAUSE** at the ending of the unwanted part, to release pause mode.
Recording resumes from the point set in step 1.

Technique 2

When an unwanted scene has already started recording, you can rewind the cassette to the beginning of the unwanted part, have the VCR standby in recording pause mode, and resume recording when the unwanted scene is over.

- 1 Press **PAUSE** to set the VCR to recording pause mode.
- 2 Turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise or clockwise to search for the point from which you wish to continue recording.
- 3 Release the DUAL MODE SHUTTLE ring on the VCR at the desired point.
After an instant in still mode, the VCR automatically enters recording pause mode.
- 4 Press **PAUSE**.
Recording resumes.

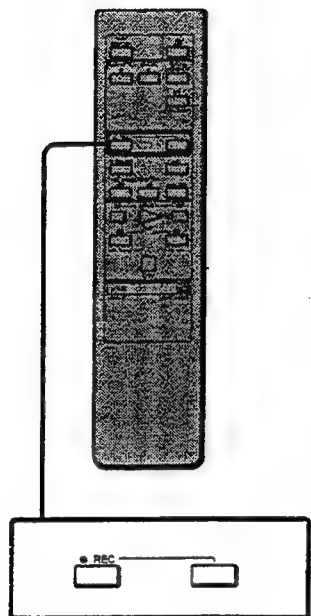
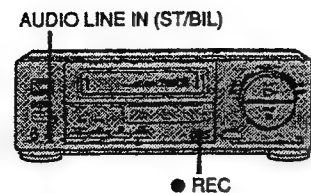
Selecting the Audio Input from the External Source

You can select the sound you want to record when you want to record a stereo or bilingual pre-recorded programme from other equipment such as a VHS-format VCR.

Press AUDIO LINE IN (ST/BIL) on the front of the VCR. For each press, you can select the sound to be recorded. The lighted sound indicators will show you what sound you are recording.

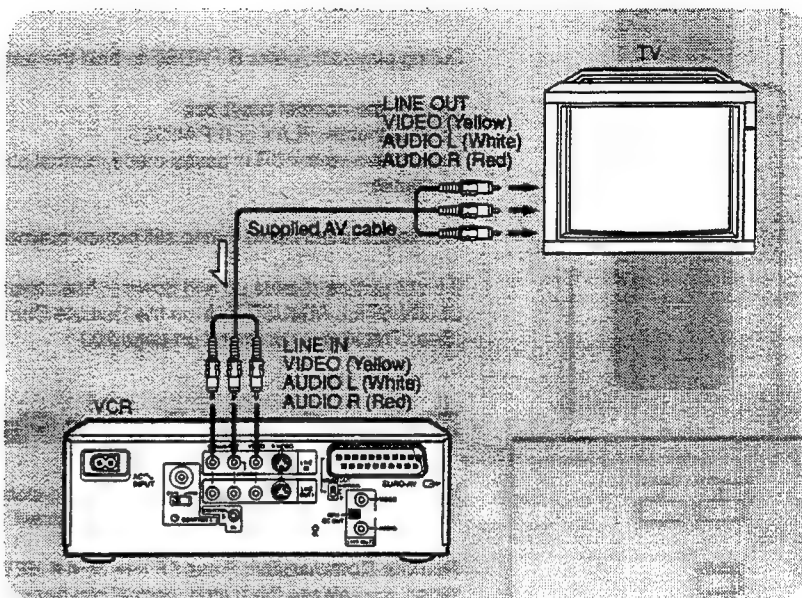
When recording

Sound mode	Lighted monitor sound indicators on the VCR front panel	Monitor sound
STEREO	STEREO	STEREO sound
BILINGUAL	MAIN/L	MAIN sound
	SUB/R	SUB sound
	MAIN/L and SUB/R	MAIN+SUB sound



Recording TV Programmes

Since the VCR itself does not have a built-in TV tuner, you cannot record TV programmes if you have made a VCR-TV connection using 1A, 1B, 1C or 1D of Audio/Video (A/V) Hookup on pages 7 and 8, or RFU DC OUT Hookup on page 9. However, if your TV has line output jacks, you can record TV programmes. You will need to make an additional connection shown below. If you have made a VCR-TV connection using 1E of Audio/Video (A/V) Hookup on page 8, you can record TV programmes without making an additional connection.



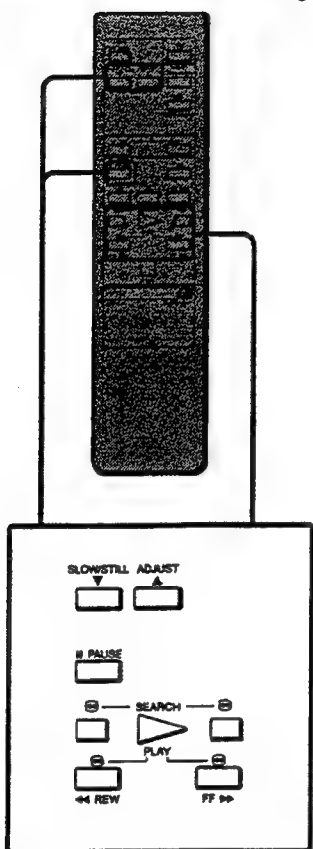
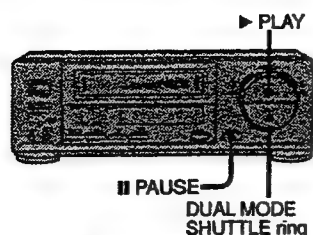
- 1 Turn on the TV and select the TV programme you want to record on the TV.
- 2 Insert a cassette into the VCR.
- 3 Select the sound with AUDIO LINE IN (ST/BIL) on the front of the VCR.
- 4 Press both ● RECs on the Remote Commander at the same time, or ● REC on the VCR.

Note

When you use the LINE IN VIDEO jack and the LINE IN S VIDEO connector at the same time, the LINE IN S VIDEO connector has priority, and no signal will be input to the LINE IN VIDEO jack. Therefore, if you do not use the LINE IN S VIDEO connector, be sure to disconnect the S VIDEO cable.

You should keep the TV on while you are recording TV programmes.

Variable Speed Playback



The following section explains the advanced playback functions available on your VCR.

Using the DUAL MODE SHUTTLE ring on the VCR or FF ►► and ◀◀ REW on the Remote Commander, you can play a cassette at a variety of forward and reverse speeds. You can also freeze a picture using the pause function.

Variable speed playback of the cassette recorded in LP mode is possible, but not guaranteed.

Still Picture

During playback, press ■ PAUSE to hold the picture in one place.

To resume normal playback

Press either ► PLAY or ■ PAUSE.

If you leave your VCR in pause mode, normal playback resumes after approximately 7 minutes.

The sound is not heard during still picture playback.

If a still picture shakes up and down or has streaks, you can adjust it using SLOW/STILL ADJUST ▼/▲ on the Remote Commander. (See "Tracking Adjustment" on page 20.)



Picture Search During Playback

VCR: Turn the DUAL MODE SHUTTLE ring clockwise or counterclockwise. When you release the ring, normal playback will resume.

Remote Commander: Press FF ►► or ◀◀ REW.

When you release the button, normal playback will resume.

Locked Picture Search

This feature works only when using the Remote Commander.

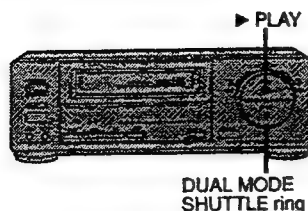
Press ⊞ or ⊞ SEARCH on the Remote Commander during playback or playback pause. If you press ⊞ SEARCH, the VCR enters locked picture search mode in the reverse direction. If you press ⊞ SEARCH, the VCR enters locked picture search mode in the forward direction.

To resume normal playback

Press ► PLAY.

Notes

- When viewing the picture in variable speed playback mode, the picture may shake vertically or the colour may become black and white, depending upon the TV you are using.
- During picture search, several streaks will appear on the TV screen. This is normal. If you play back a tape recorded in LP mode, a wider streak will appear on the TV screen during picture search.
- If you perform picture search with the VCR connected to your TV via LINE OUT2 RFU DC OUT, you may hear a slight sound such as a buzzing sound.
- When you perform a variable speed playback in the reverse direction, a wider streak appears on the screen, especially in SP mode. This is normal.



x 2 (Double), -x 2 (Reverse Double) Speed Playback

VCR:

Slowly turn the DUAL MODE SHUTTLE ring clockwise (in the forward direction) or counterclockwise (in the reverse direction) to view pictures at double normal speed.

To return to normal playback

Release the ring.

Remote Commander:

Press x2.

To play back in the reverse direction

Press < DIRECTION.

To resume the forward direction

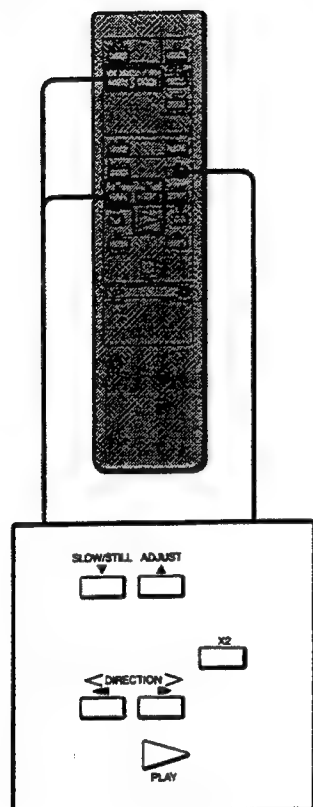
Press DIRECTION >.

To return to normal playback

Press ► PLAY.

The sound is muted during forward double-speed playback and reverse double-speed playback.

If a picture shakes up and down or has streaks during forward double-speed playback, you can adjust it using SLOW/STILL ADJUST ▼/▲ on the Remote Commander. (See "Tracking Adjustment" on page 20.)



-x 1 (Reverse Normal) Speed Playback

VCR:

Gently turn the DUAL MODE SHUTTLE ring counterclockwise until the VCR enters reverse slow motion playback mode. After a slow motion picture appears on the TV screen, you can view a -x 1 (reverse normal) speed playback picture. Hold the DUAL MODE SHUTTLE ring at that point.

Remote Commander:

Press ► PLAY, then < DIRECTION.

Notes

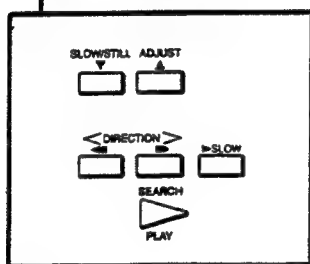
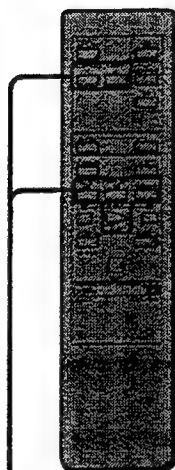
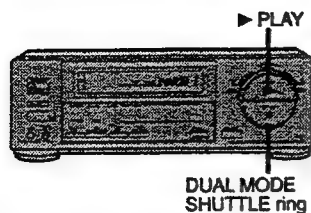
- It takes about a few seconds to reverse the direction in slow motion mode or frame-by-frame mode.
- When the tape speed is switched, noise appears a moment.
- If a tape has portions recorded in both SP and LP modes, the VCR will automatically adjust the tape speed during reverse/forward slow motion playback. However, you will not notice any change during x2 playback even though the tape speed is actually switched from SP to LP or LP to SP.

Frame-by-Frame Picture

During playback pause, press DIRECTION > to advance the picture one frame or < DIRECTION to reverse the picture one frame. Each time you press the button, the picture moves one frame.

To resume normal playback

Press ► PLAY.



Note
It is necessary to adjust tracking for both the SP and LP modes.

Slow Motion Playback

VCR:

Slowly turn the DUAL MODE SHUTTLE ring clockwise (in the forward direction) or counterclockwise (in the reverse direction) until the tape is played back in slow motion in the forward or reverse direction.

To return to normal playback

Release the ring.

Remote Commander:

Press ► SLOW.

To play back in the reverse direction

Press < DIRECTION.

To resume forward direction

Press DIRECTION ►.

To return to normal playback

Press ► PLAY.

The sound is muted during reverse slow motion playback.

If you leave the VCR in slow motion mode for more than approximately 30 seconds, the VCR will automatically return to normal playback.

If a slow motion picture shakes up and down or has streaks, you can adjust it by pressing SLOW/STILL ADJUST ▼/▲ on the Remote Commander. (See "Tracking Adjustment" below.)



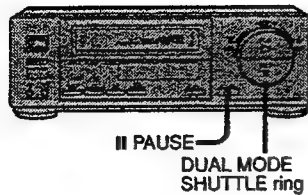
Tracking Adjustment

If a picture shakes up and down or has streaks during forward double-speed playback, still playback, slow motion playback (in the forward and reverse direction), you can adjust it using SLOW /STILL ADJUST ▼/▲ on the Remote Commander. However, the adjustment cannot be performed while you are turning the DUAL MODE SHUTTLE ring.

Use the Remote Commander, therefore, for operating still picture and slow motion playback.

Press and hold SLOW/STILL ADJUST ▼/▲ on the Remote Commander until you obtain the best possible picture on the TV screen.

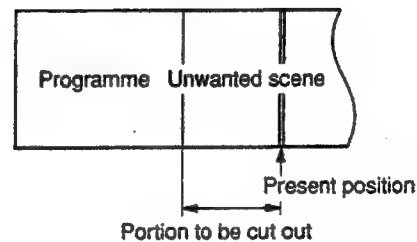
Cutting out the Unwanted Scenes – SHUTTLE EDIT



During Recording

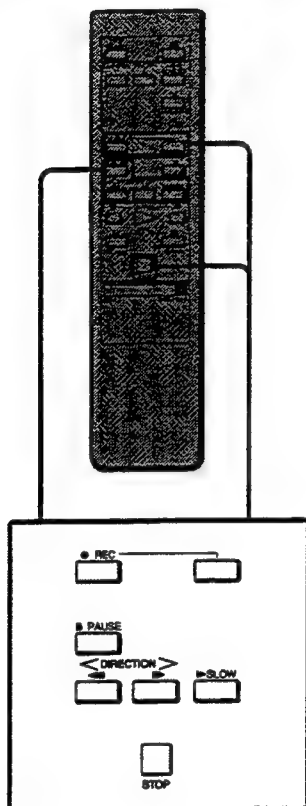
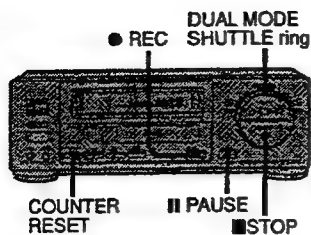
If you wish to cut out unwanted scenes, you can pause recording and rewind the tape until the beginning of an unwanted scene is reached. You can then record over it. This feature is controlled using the DUAL MODE SHUTTLE ring on the VCR.

- 1 Press **II PAUSE** during recording.
The VCR enters recording pause mode.
- 2 Turn the DUAL MODE SHUTTLE ring on the VCR counterclockwise to rewind the tape until the unwanted scene appears.



Turn the ring slightly. During rewinding, the screen changes to the playback picture, but sound is not switched. When you release the ring, the VCR enters recording pause mode.

- 3 Press **II PAUSE** again to release the pause when a scene you want to start cutting in appears on the screen.
Recording starts.



Note
The picture may be distorted a moment at the cut-out point (recording end point).

During Playback

You can re-record onto an unwanted portion of a pre-recorded cassette using the DUAL MODE SHUTTLE ring on the VCR.

- 1 Press **PAUSE** at the end of the unwanted scene during playback.
The VCR enters playback pause mode.
- 2 Press **COUNTER RESET** on the VCR to reset the linear time counter to "0H00M00S."
- 3 Turn the **DUAL MODE SHUTTLE ring** on the VCR until the beginning of the unwanted scene appears on the screen.
When you release the ring, the VCR enters playback pause mode.
Use **< DIRECTION >** on the Remote Commander to rewind or advance the picture frame by frame when searching for more specific points.
- 4 Press **REC**.
The VCR enters recording pause mode.
- 5 Select a new programme source for re-recording.
- 6 Press **PAUSE** again to release the pause when the scene to be recorded begins to appear on the screen.
Recording starts.
- 7 Press **STOP** when the linear time counter shows "0H00M00S."

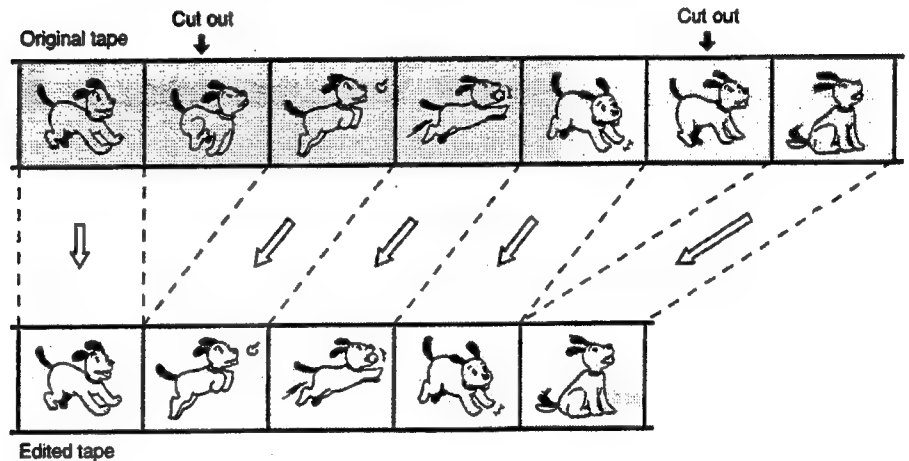
Overview of the Editing Functions

Using a second VCR, you can record programmes from one VCR to the other. The following are the tape editing functions available on the VCR. You can perform these editing using the synchronized editing function or manually (not using the synchronized editing). In this section, the editing using the synchronized editing function will be mainly explained.

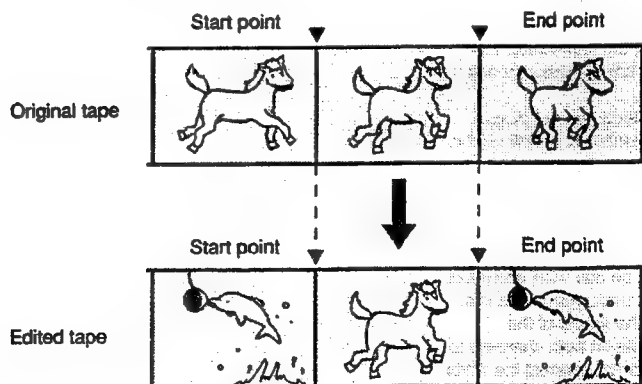
- **To make a copy of a tape**
See "Tape Dubbing" on page 24.



- **To edit out unwanted scenes using the synchronized editing function (Synchronized Assemble Editing)**
You can also use the synchronized editing function if your other VCR has a control L Φ connector. Using this function controls both the playback VCR and the recording VCR simultaneously from the VCR the LANC mode of which has been set to "M."
→ See "Synchronized Assemble Editing" on page 30.



- **To Insert another scene into a tape**
→ See page 30.

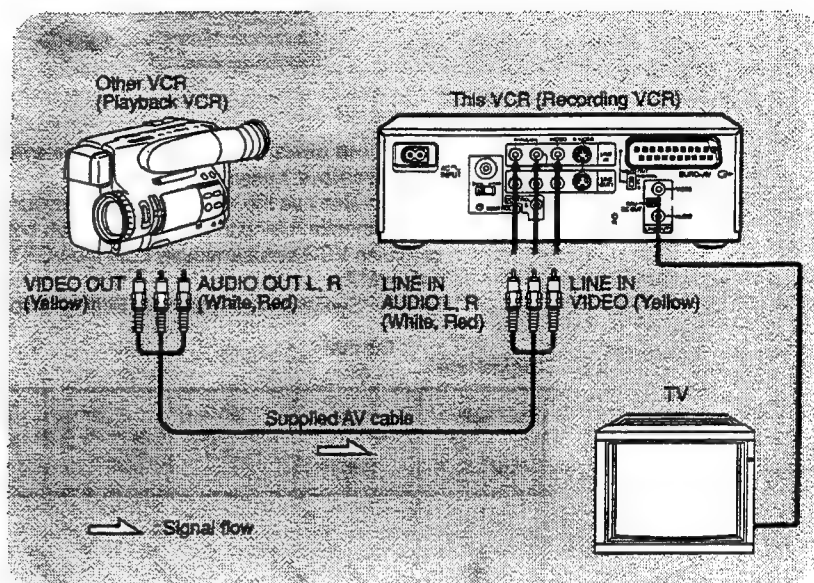


Tape Dubbing

Editing from the Other VCR

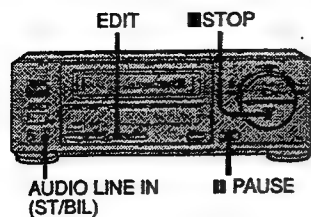
Here's how to edit from another VCR (such as an 8 mm video camera recorder or a VHS-format VCR for playback) when using this VCR for recording.

Connection



Notes

- When connecting two VCRs, do not connect them so that both VCRs are used as a recording VCR and a playback VCR simultaneously. Doing so may cause a humming noise.
- If your playback VCR is equipped with the S VIDEO output connector, you can use the S VIDEO cable (not supplied) to connect to the LINE IN S VIDEO connector on this VCR. This connection gives you a higher quality picture than using the video cable.
- When you use the LINE IN VIDEO jack and the LINE IN S VIDEO connector at the same time, the LINE IN S VIDEO connector has priority.
- To avoid deterioration of picture quality, remember to switch on the EDIT function of the other VCR if the EDIT function is provided with that VCR.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN AUDIO L on this VCR and leave the red plug unplugged. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN AUDIO R.
- If your playback VCR is a EURO 21-pin type, use the VMC-216 cable (not supplied).



Before You Begin

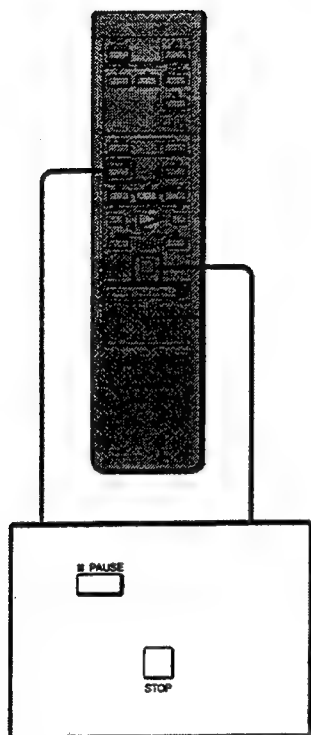
- Press AUDIO LINE IN (ST/BIL) to select the sound to be recorded if you record a stereo or bilingual tape.
- Press EDIT on the VCR so that the EDIT indicator lights up.

Note

If your playback VCR also has an editing function, select it to reduce static and improve reception.

Operation

- 1 Insert a blank cassette into this (recording) VCR.
- 2 Turn on the other (playback) VCR and insert a source cassette.
- 3 Locate the playback starting point and select the playback pause mode on the other VCR.
- 4 Locate the recording starting point and select the recording pause mode on this VCR.
- 5 Press **II PAUSE** on both VCRs.
For best results, press **II PAUSE** on the other VCR just before pressing **II PAUSE** on this VCR.
When you've finished editing, press **■ STOP** on both VCRs.



What is the EDIT function?

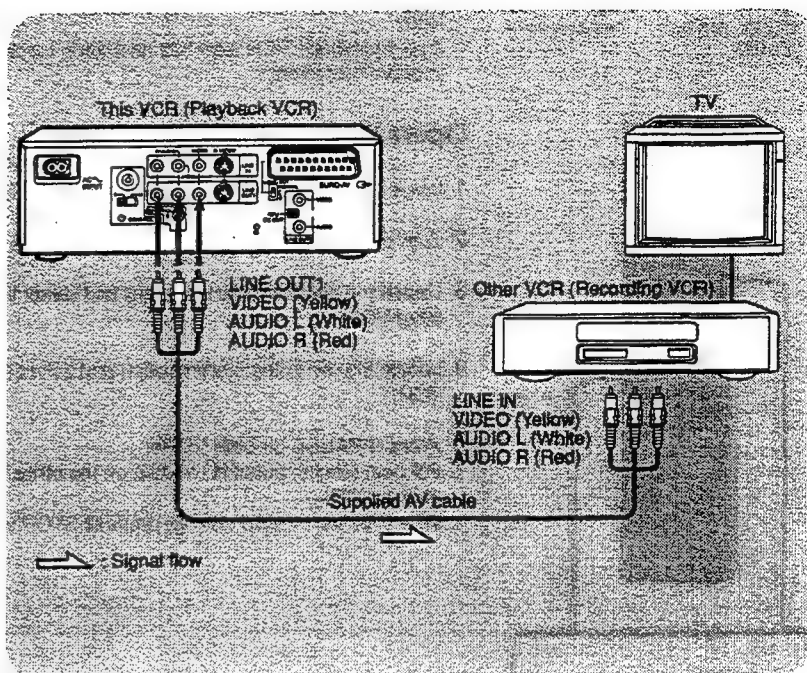
This function avoids deterioration of picture on the duplicated tape if you activate it when dubbing tapes.

Editing onto the Other VCR

Here's how to edit from this VCR (as the playback VCR) onto the other VCR (as the recording VCR).

Notes

- When connecting two VCRs, do not connect them so that both VCRs are used as a recording VCR and a playback VCR simultaneously. Doing so may cause a humming noise.
- If your recording VCR is equipped with the S VIDEO input connector, you can use the S VIDEO cable (not supplied) to connect to the LINE OUT1 S VIDEO connector on this VCR. This connection gives you a higher quality picture than using the video cable.
- If your recording VCR is a monaural unit, make connections using the VMC-910MS/920MS cable (not supplied).
- If your recording VCR is a EURO 21-pin type, use the VMC-216 cable (not supplied).



Before You Begin

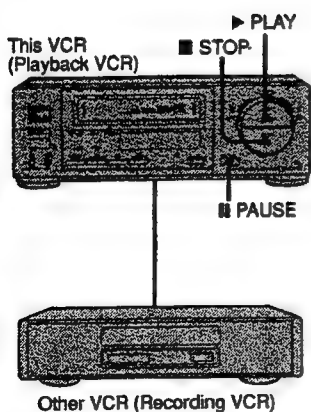
Press EDIT on this VCR so that the EDIT indicator lights up.

Note


If the other VCR has an editing function, it should also be selected to improve reception.

Operation

- 1 Turn on the other (recording) VCR and insert a blank cassette.
- 2 Insert a source cassette into this (playback) VCR.
- 3 Locate the playback starting point and select playback pause mode on this VCR.
- 4 Locate the recording starting point and select recording pause mode on the other VCR.
- 5 Press ■ PAUSE on both VCRs.
For best results, press ■ PAUSE on this VCR just before pressing ■ PAUSE on the other VCR. When you've finished editing, press ■ STOP on both VCRs.



Synchronized Editing

If your other VCR has a control L  or control S connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when SYNCHRO EDIT is pressed. To use this function, you must connect a designated control cable (Control L or S cable) in addition to the connections of the audio and video cables.

There are two types of control cables: control L (REMOTE) cable and control S cable according to the type of connectors of the VCRs.

After you have made the connections on this and following pages, you must set the LANC mode. For details, see page 29.

Connecting Video Equipment with the LANC Connector

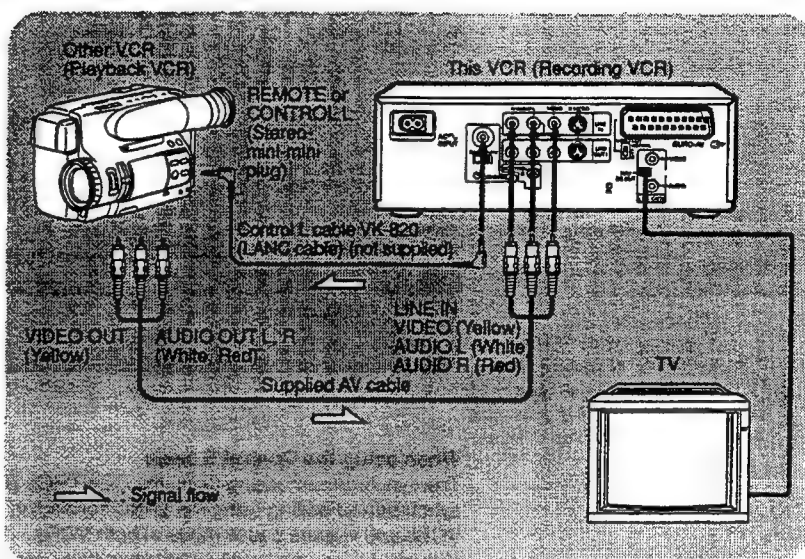
Notes

- When connecting two VCRs, do not connect them so that both VCRs are used as a recording VCR and a playback VCR simultaneously. Doing so may cause a humming noise.
- If your playback VCR is equipped with the S VIDEO output connector, you can use the S VIDEO cable (not supplied) to connect to the LINE IN S VIDEO connector on this VCR. This connection gives you a higher quality picture than using the video cable.
- When you use the LINE IN VIDEO jack and the LINE IN S VIDEO connector at the same time, the LINE IN S VIDEO connector has priority.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN AUDIO L on this VCR and leave the red plug unplugged. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN AUDIO R.
- If your playback VCR is a EURO 21-pin type, use the VMC-216 cable (not supplied).
- If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.

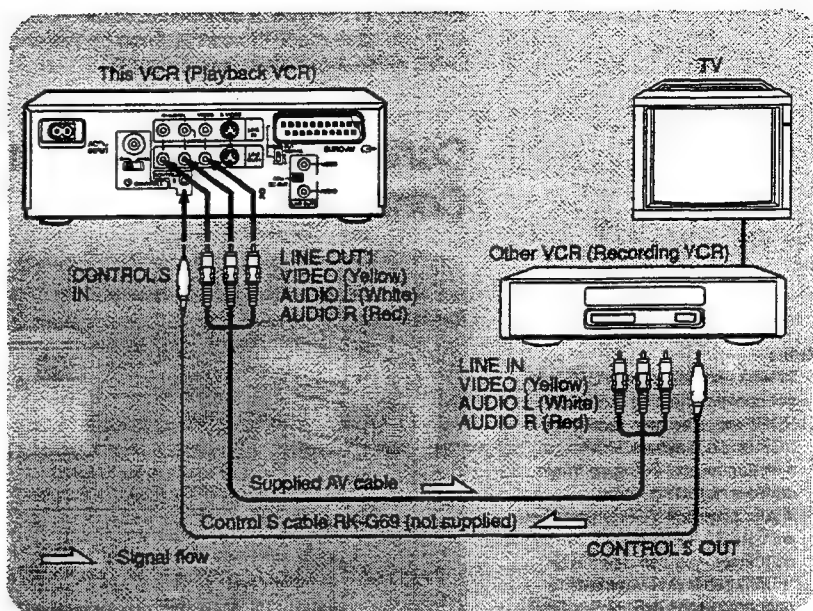
About the (LANC)

LANC stands for Local Application Control System.

The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE.



Connecting Video Equipment with the CONTROL S Connector



When using the Control S cable

The synchronized editing using the CONTROL S connector is the same as the synchronized editing using the LANC connector. This enables you to pause both VCRs and release pause mode of both VCRs.

You can only perform synchronized editing using the CONTROL S IN connector when the other VCR has the CONTROL S OUT connector.

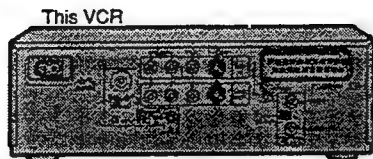
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on the other equipment.

Set the command mode of this VCR and the other video equipment to the same position.

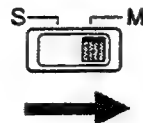
LANC Mode Setting

When you perform synchronized editing, remember to set the LANC mode as described below:

When you want to control the other VCR from this VCR



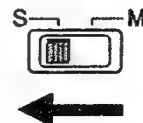
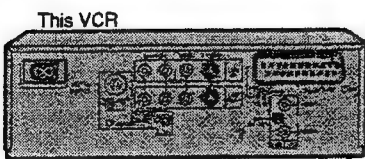
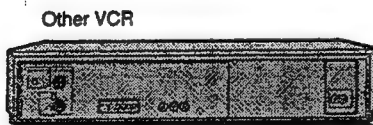
Other VCR



Slide the LANC mode selector located on the rear of the VCR to the "M" position.

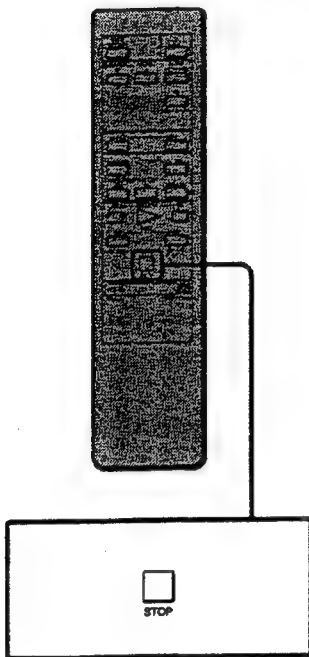
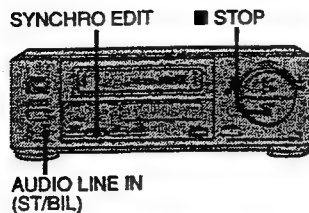
Select "S" for LANC mode setting.
For video camera recorders such as the CCD-TR series, the LANC mode is always set to "S."

When you want to control this VCR from the other VCR



Slide the LANC mode selector located on the rear of the VCR to the "S" position.

Note
Do not make the CONTROL L connection between this VCR and the other VCR with the LANC mode settings of both VCRs set to the same position.



Synchronized Assemble Editing

Before You Begin

- Press AUDIO LINE IN (ST/BIL) to select the sound to be recorded if you record a stereo or bilingual tape.
- Check the LANC mode setting (see page 29).

Operation

- 1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.
- 2 Locate the recording starting point on this VCR and put the VCR in recording pause mode.
- 3 Locate the beginning of the scene to be edited out on the other VCR and put the VCR in playback pause mode.
- 4 Press SYNCHRO EDIT on this VCR. The SYNCHRO EDIT indicator lights up. Pause mode of both the recording VCR and the playback VCR is released to start editing.
- 5 Press SYNCHRO EDIT on this VCR at the point where you want to stop recording. This VCR enters recording pause mode, and the other VCR enters playback pause mode.
- 6 If you have another scene you want to edit, repeat steps 3 to 5.
- 7 After editing has been completed, press ■ STOP on both VCRs.

To make use of the linear time counter "0H00M00S" (zero) for synchronized editing

You can perform synchronized insert editing when this VCR is used as the recording VCR and the LANC mode is set to "M."

When the linear time counter on this (recording) VCR reaches zero during synchronized editing, the other (playback) VCR enters playback pause mode and this VCR enters recording pause mode.

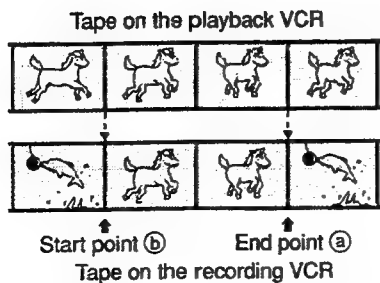
During synchronized editing

- The EDIT function is activated automatically.
- If the linear time counter reaches zero, synchronized editing stops.
- The COUNTER RESET button does not function.

See the instructions below for operation.

- 1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.
- 2 Locate the editing end point (a) by playing back the cassette on this (recording) VCR and press COUNTER RESET on this VCR. The counter resets to "0H00M00S."
- 3 Rewind the tape on this VCR and put the VCR in recording pause mode at the editing start point (b).
- 4 Press SYNCHRO EDIT on this VCR to start editing.

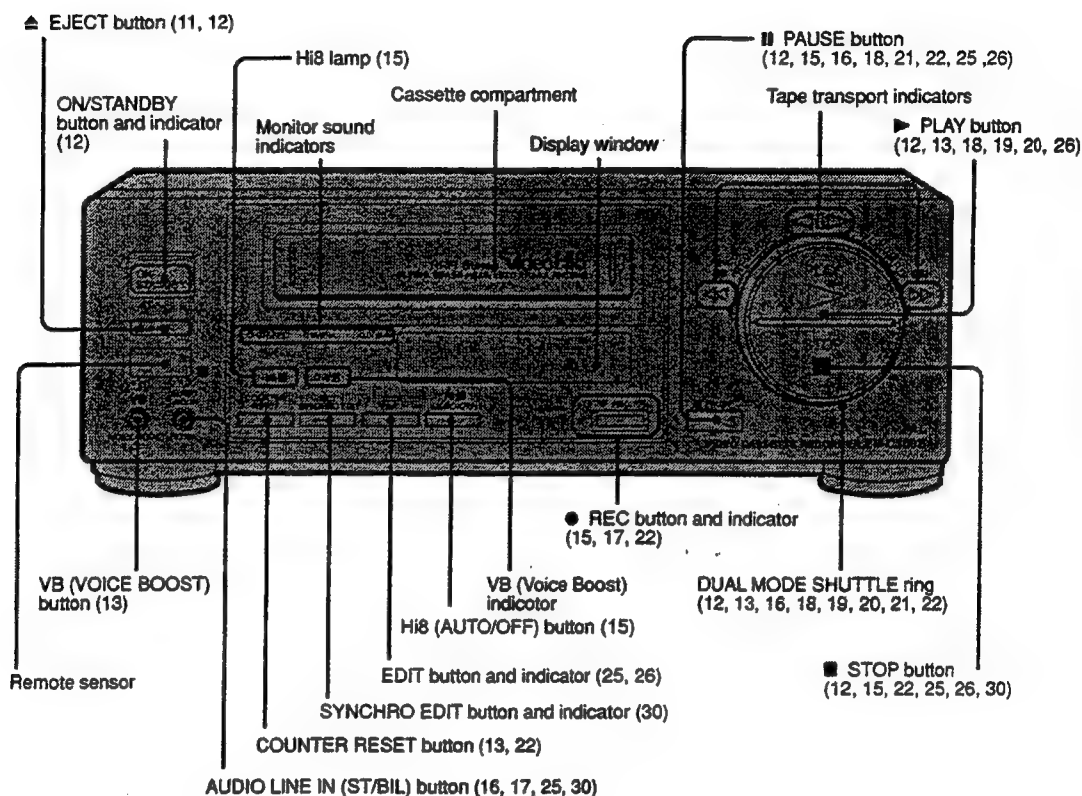
When the linear time counter reaches zero, the other VCR enters playback pause mode and this VCR enters recording pause mode.



Identifying the Parts and Controls

Front Panel

The function of each control is explained on the page indicated in parentheses ().

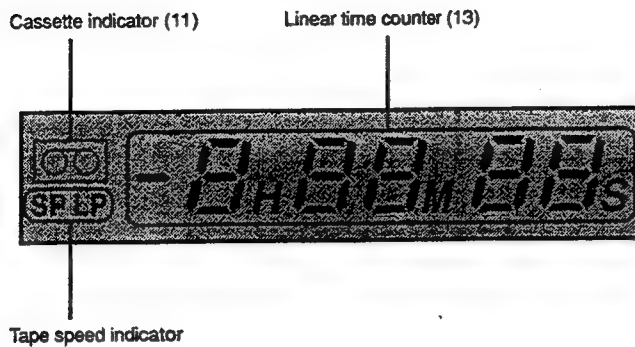


Tape transport indicators

No indicator lit	Recording	II	Recording pause
◀	Playback, double speed playback (reverse), Slow motion playback (reverse)	▶	Playback, double speed playback (forward), Slow motion playback (forward)
◀ II	Play pause (reverse)	II ▶	Play pause (forward)
◀◀	Rewind	▶▶	Fast forward
◀◀ ▶	Picture search, locked picture search (reverse)	▶▶ ▶	Picture search, locked picture search (forward)
◀ ⚙	Frame-by-frame picture (reverse)	⚙ ▶	Frame-by-frame picture (forward)
◀◀ ⚙	Auto play		

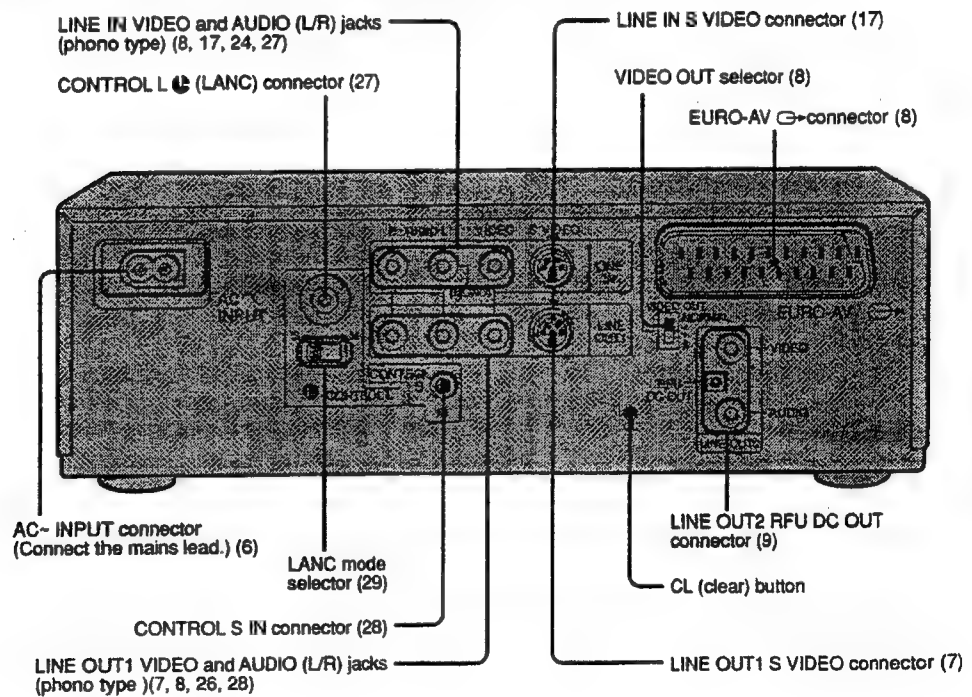
Display Window

Each indicator is explained on the page indicated in parentheses ().



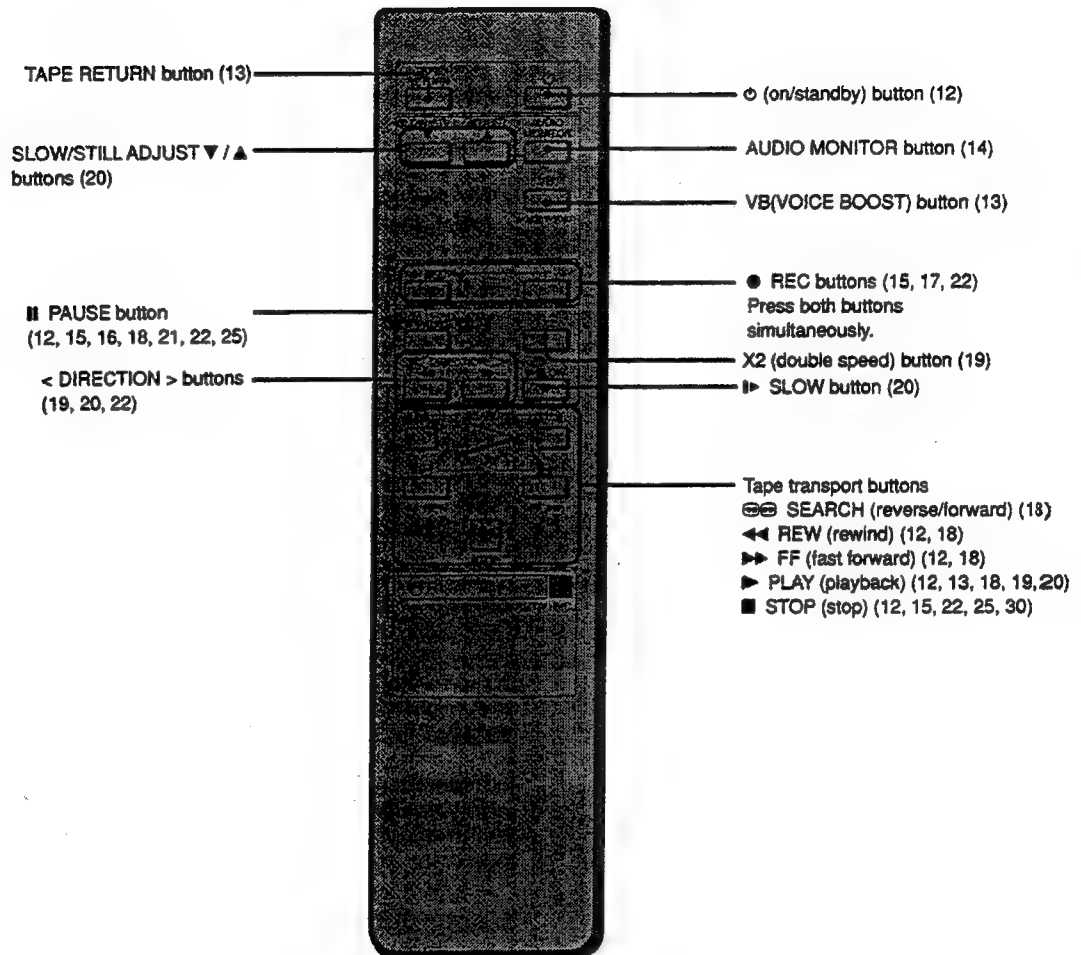
Rear Panel

The function of each control is explained on the page indicated in parentheses ().



Remote Commander

The function of each control is explained on the page indicated in parentheses ().



Technical Information

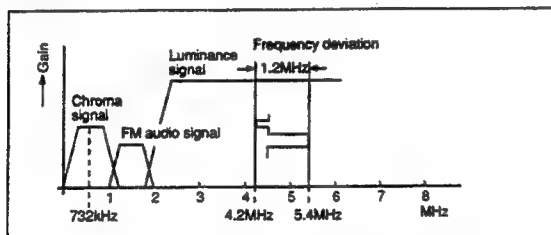
Hi8 (High Eight) Video System

The 8 mm video system employs a metal powder tape. This means the video recorder is capable of recording a large amount of information (enhances picture quality). The Hi8 video system was developed utilizing the advantages of the 8 mm video system. (See the diagrams below.) The main characteristics of the Hi8 video system are as follows:

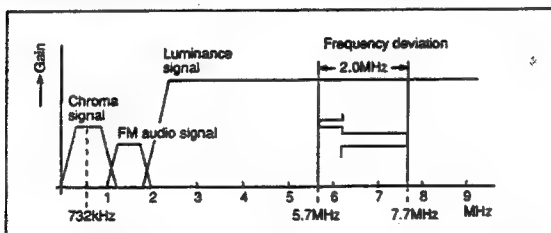
Characteristics of Hi8 System

- **Super high quality picture**
The information capacity, a key element for picture improvement, is increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal has been shifted up to 5.7 – 7.7 MHz. This is higher than the 4.2 – 5.4 MHz range of the standard 8 mm video system. Consequently, the horizontal resolution is improved to 400 lines.

Frequency allocation of the standard 8 mm video system



Frequency allocation of the Hi8 video system



- **Use of high grade tape to match the Hi8 video system**
Metal tape for the Hi8 video system is ideal because it has greater magnetism which permits high-density recording. The Hi8 VCR uses such high-grade tapes for the Hi8 video system, covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

- **S VIDEO (separate luminance/chroma signal) input/output connectors**

Conventionally, the video signal exchanged between the TV set and video equipment or among several video devices is called a composite video signal, in which the luminance (Y) and chroma (C) signals are mixed. In this system the composite video signal is liable to produce interference, resulting in a reduction of picture quality. To avoid this quality reduction, an S VIDEO connector is used to transmit and receive the video signal separated into the luminance signal and the chroma signal. With the separated video signal, flicker and colour blur in the picture are minimized and sharpness is enhanced to such an extent that hair and fine stripes are clearly visible. The S VIDEO connector also assures excellent editing quality with a minimum loss of picture quality.

- **Tape speed**

The Hi8 video system uses the same tape speed as the standard 8 mm video system. An E5-120 tape allows four hours of playback in LP mode.

Recording and Playback in the Hi8 Video System

To take advantage of the EV-C500E Hi8 video system, you must use Hi8 video tapes for recording and playback.

You can use the EV-C500E to record and playback standard 8 mm video tapes if Hi8 quality is not necessary. (The Video 8 and standard 8 mm systems are often referred to as "normal" mode.)

The EV-C500E automatically detects the type of video system (standard or Hi8) in which the tape was recorded and plays the tape back accordingly.

To make the most of the Hi8 video system, set the Hi8 setting with the Hi8 (AUTO/OFF) button to "AUTO." In this way, EV-C500E records in the Hi8 video system. (See page 15.)

Compatibility with conventional video recorder decks

Tapes recorded using the Hi8 video system cannot be played back on conventional 8 mm video equipment (standard 8 mm video system).

Troubleshooting

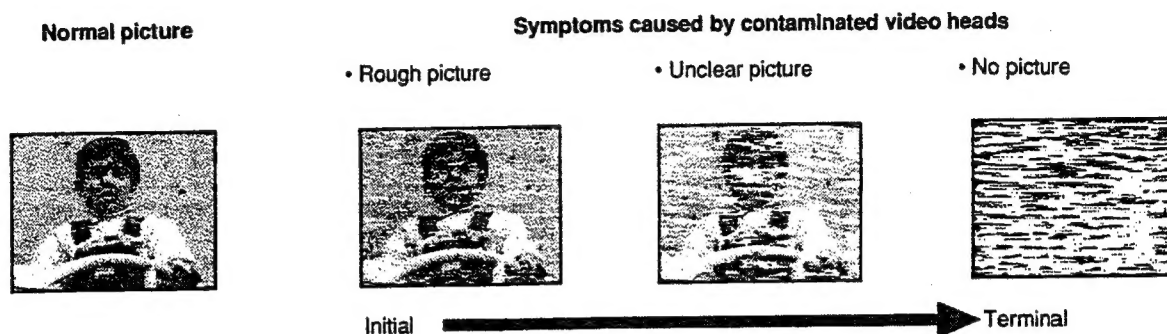
If you have a problem with your VCR, first check the mains lead connection, then go through the following list. Should the difficulty persist, unplug the unit and contact your Sony dealer or local authorized Sony Service Centre facility.

	Symptom	Possible causes and remedies
Power	The ON/STANDBY button does not work.	<ul style="list-style-type: none"> The mains lead is disconnected.
	The VCR does not play.	<ul style="list-style-type: none"> The tape is at its end.
Playback	No picture on the TV screen	<ul style="list-style-type: none"> The correct programme position for the VCR has not been selected on the RFU adaptor, or video input has not been selected on the monitor. Make sure that S VIDEO connection is tight. Clean the video head. (See page 36.)
	The playback picture is not clear.	<ul style="list-style-type: none"> The correct programme position for the VCR has not been selected on the RFU adaptor. The video heads are dirty. Clean the heads using the Sony V8-25CLH video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If a cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony Service Centre facility. (Do not use a commercially available wet-typed cleaning cassette. It may damage the video heads.) The video heads are worn out.
	Noisy picture	<ul style="list-style-type: none"> Place the VCR away from a TV. Tape is defective. Use a new cassette.
	The picture moves vertically during picture search mode.	<ul style="list-style-type: none"> Adjust the vertical hold control on the TV or colour monitor.
	The sound drops out.	<ul style="list-style-type: none"> The cassette is defective. Use a new video cassette.
Recording	A cassette is ejected when ● REC is pressed.	<ul style="list-style-type: none"> Check the safety tab.
	The VCR does not record.	<ul style="list-style-type: none"> Remove the S VIDEO cable from the LINE IN S VIDEO connector when the cable is not used. No cassette has been inserted. The cassette is at its end.
Others	A cassette cannot be inserted.	<ul style="list-style-type: none"> A cassette has already been inserted.
	The Remote Commander cannot be operated.	<ul style="list-style-type: none"> The batteries are low.
	The VCR does not respond when you press any button.	<ul style="list-style-type: none"> The built-in microprocessor may be defective. Pressing the CL (clear) button on the rear panel, with a pointed object such as a ball-point pen, may fix the problem.
	When you perform synchronized editing, you cannot control this VCR from the other VCR.	<ul style="list-style-type: none"> The LANC mode of the other VCR is set to "S" (See page 29). The LANC mode of this VCR is set to "M" (See page 29).

Taking Care of Your EV-C500E

Video Head Cleaning

When playback pictures are noisy and hardly visible, or no picture screen appears, the video heads may be contaminated. In such a case, clean the video heads using video head cleaning tape V8-25CLH (not supplied) or ask Sony service personnel to clean the video heads.



Worn Video Heads

If the VCR displays a poor picture after you clean the video heads, you may need to replace them. Consult your dealer or the Sony Service Centre nearest you.

Check the Video Heads after 1,000 Hours of Use

This VCR is a high-precision machine. It must record on or play back from magnetic tapes on which the image signals from the colour TV or the video camcorder are recorded.

The video head or mechanical parts for transporting the tape become contaminated or worn after extended use. You should have the VCR checked (cleaning, oiling and replacing of worn parts) after each 1,000 hours of use.

Moisture Condensation

- **Main Unit**
Do not operate the unit right after having transported it from a cold location to a warm location or in a room where the temperature rises suddenly, because moisture may condense in the operating section of the unit. Wait for about an hour before turning the power on in the new location or keep the rise in room temperature gradual. If the unit is operated with moisture condensation, the unit and the tape may be damaged.
Therefore remove the tape immediately when there is a possibility of moisture condensation and no picture is obtained. To evaporate the moisture rapidly, leave the player turned on without a tape loaded.
- **Cassette**
When a cassette tape is carried from a cold place to a warm place, the cassette tape may become wet. When there is any possibility of moisture condensation, eject the cassette tape and leave it outside of the compartment for about one hour.

Specifications

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording	Rotary head, AFM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassettes
Tape speed	SP: approx. 20.051mm/sec. LP: approx. 10.058mm/sec.
Maximum recording time	SP: 1 hour 30 minutes (with Sony E5/P5-90 cassette)
Fast-forward and rewind time	Approx. 4.5 minutes (with Sony E5/P5-90 cassette)

Inputs and outputs

Video input	LINE IN VIDEO (phono jack) (1) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	LINE OUT1/2 VIDEO (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative EURO-AV (21-pin) (1) Output signal: pin 19 1 Vp-p, 75 ohms unbalanced, sync negative
S VIDEO input	LINE IN S VIDEO (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohm, unbalanced
S VIDEO output	LINE OUT1 S VIDEO (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced EURO-AV (S) 21-pin (pins 15 and 19)
Audio input	LINE IN AUDIO (phono jack) (2) Input level: -7.5 dBs Input impedance: more than 47 kilohms
Audio output	LINE OUT1 AUDIO (phono jack) (2) LINE OUT2 AUDIO (phono jack) (1) Standard impedance: -7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms EURO-AV (21 pin) (1) Standard impedance: -6 dBs at load impedance 1 kilohm Output impedance: less than 10 kilohms
CONTROL S IN	Mini jack
CONTROL L	Stereo mini-mini jack

General

Power requirements	UK model: 240 V AC, 50Hz Models for other countries: 220 - 240 V AC, 50 Hz
Power consumption	13 W (max.)
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	-20°C to 60°C (-4°F to +140°F)
Dimensions	Approx. 225 x 75 x 252 mm (w/h/d)
Mass	Approx. 8 7/8 x 3 x 10 inch Approx. 2.1 Kg (4 lb 10 oz)

Remote Commander RMT-V124C

Remote control system	Infrared control
Power requirements	3V DC (2 IEC designation R6 batteries)

Supplied accessories, see page 5.

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

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